strength whatsoever. Applications utilizing RSSI to identify location are described in United States patent US 5,714,932 and United States patent US 5,218,344.

US patent application US2002/140419 describes a system for measuring small changes in distance. The system comprises a fixed unit and a mobile unit, the mobile unit being a passive transponder that reflects signals broadcast by the fixed unit. The distance between the fixed and mobile units is determined by the variation of mutual coupling between the coil in the mobile unit and the coil in the fixed unit: the fixed unit broadcasts a field that is picked up by the mobile unit coil, generating a voltage in that coil that, in turn, creates a current in the coil. This current creates an opposing magnetic field that is "sensed" by the fixed unit coil with the result that its impedance changes and this impedance change is measured by the fixed unit's bridge detector circuit. The range of the system is dependent on mutual coupling between the coils and the sensitivity of the circuit to detect changes to this coupling. The further they are separated, the weaker the coupling and there will come a point where a change in distance will make a change in output voltage that is comparable with the noise level of the circuit. As described in paragraphs 1 and 9 of the application, the system can only work over very short distances, of the order few cm.

Summary of the Invention

According to a first aspect of the present invention there is provided a radio frequency receiver for use in a proximity detecting system, the radio frequency receiver comprising

at least one antenna coil operable to receive radio frequency signals;

tunable receiver circuitry arranged in operative association with the antenna coil and being arranged to modify the frequency at which radio signals are received by the radio frequency receiver;

a signal processor arranged to amplify and filter signals received by the radio frequency receiver;

a processing system arranged to receive radio signals amplified and

filtered by the signal processor so as to evaluate a signal strength associated with each said antenna coil, the processing system being arranged to evaluate a distance between a radio frequency transmitter and the radio frequency receiver on the basis of evaluated signal strengths associated with radio signals received by at least one antenna coil, wherein the radio frequency receiver is operable to receive and process radio signals of frequencies between 100kHz and 10MHz.

An advantage of operating in this low frequency range is that multi-path problems associated with high frequency systems, such as reflections from objects located between the path of the transmitter and receiver, are significantly reduced. A further advantage is that emissions from a low frequency transmitter remain as a near field transmission for distances of tens or even hundreds of metres from the transmitter (the extent of the near field depending on operating frequency). When operating within the near field of a transmitter, signal strength is proportional to the inverse cube of distance from it, allowing its range to be identified extremely accurately. In some circumstances (i.e. for some operating frequencies), this distance can be identified to within ±10 mm. Within the 100 kHz – 10 MHz range of operation, radio signals from loop antennas emanate primarily as a magnetic field, which, being a vector, has a direction in addition to a magnitude. The direction of the magnetic field varies in a non-uniform way, which means that, in order to measure the magnitude of